

PENDING CLAIMS AS OF SEPTEMBER 2, 2002

40. A method of generating hair cells for an animal, comprising delivering a therapeutically effective amount of an *atonal*-associated nucleic acid sequence to a cell of said animal, wherein hair cells develop in said animal and wherein said *atonal*-associated nucleic acid sequence encodes a polypeptide that has hair cell generating activity and has at least about 80% identity to about 20 contiguous residues of SEQ ID NO:58.

41. The method of claim 40, wherein said *atonal*-associated nucleic acid sequence is Math1.

42. The method of claim 40, wherein said *atonal*-associated nucleic acid sequence is Hath1.

43. The method of claim 40, wherein said delivery comprises injecting into an inner ear a therapeutically effective amount of an *atonal*-associated nucleic acid sequence.

44. The method of claim 40, wherein said nucleic acid sequence is delivered by a delivery vehicle.

45. The method of claim 44 wherein said delivery vehicle is selected from the group consisting of an adenoviral vector, a retroviral vector, an adeno-associated viral vector, a plasmid, a liposome, a peptide, a lipid, a carbohydrate and a combination thereof.

46. The method of claim 44, wherein said delivery vehicle is selected from the group consisting of a viral vector or a non-viral vector.

47. The method of claim 44, wherein said delivery vehicle is a cell.

48. The method of claim 40, wherein said cell contains an alteration in an *atonal*-associated nucleic acid sequence or amino acid sequence.

50. The method of claim 40, wherein said nucleic acid sequence encodes a polypeptide which has at least about 80% identity to about 20 contiguous amino acid residues of SEQ ID NO:58 (Hath1).

112. A composition comprising an *atonal*-associated nucleic acid sequence in combination with a delivery vehicle, wherein said delivery vehicle results in delivery of a therapeutically effective amount of *atonal*-associated nucleic acid sequence into a cell, and wherein said *atonal*-associated nucleic acid sequence encodes a polypeptide that has hair cell generating activity and has at least about 80% identity to about 20 contiguous residues of SEQ ID NO:58.

113. The composition of claim 112, wherein said delivery vehicle comprises a vector that expresses an *atonal*-associated nucleic acid sequence or amino acid sequence in an animal cell.

114. The composition of claim 113, wherein said vector is selected from the group consisting of a viral vector, a plasmid, a liposome, a protein, a lipid, a carbohydrate and a combination thereof of said vehicles.

115. The composition of claim 112, wherein said delivery vehicle is the receptor-binding domain of a bacterial toxin.

116. The composition of claim 112, wherein said *atonal*-associated nucleic acid sequence is operatively linked to nucleic acid sequence encoding a receptor-binding domain of a bacterial toxin.

117. The composition of claim 112 wherein said *atonal*-associated nucleic acid sequence is operatively linked to nucleic acid sequence encoding a protein transduction domain.

118. The composition of claim 112, wherein said *atonal*-associated nucleic acid sequence is *Hath1*.

119. The composition of claim 112, wherein said *atonal*-associated nucleic acid sequence is *Math1*.

121. A nucleic acid sequence encoding a fusion protein comprising an *atonal*-associated amino acid sequence or fragment thereof and a desired amino acid sequence, wherein said *atonal*-associated nucleic acid sequence encodes a polypeptide that has hair cell

generating activity and has at least about 80% identity to about 20 contiguous residues of SEQ ID NO:58.

123. The composition of claim 112, wherein the composition further comprises an additional nucleic acid sequence that is not an atonal-associated nucleic acid sequence.